

## **Amendments to the Specification:**

Please make the following amendments to the specification (material to be inserted in replacement paragraphs or sections is in **bold and underline**, and material to be deleted is in ~~strikeout~~ or (if the deletion is of five or fewer consecutive characters or would be difficult to see) in double brackets [[ ]]).

Please add the following Summary paragraph:

### Summary

The present disclosure describes stage assemblies and a methods of usings an optical microscope. The stage assembly is mountable on an optical microscope for orienting a sample into a desired focal position and includes an X-axis plate operable for rectilinear shifting in the X-axis direction and a Y-axis plate mounted on the X-axis plate operable for rectilinear translation in the Y-axis direction. A Z-axis plate is mounted on the XY plate assembly for carrying a sample to be investigated and a piezoelectric actuator mechanism is interposed between the XY plate assembly and the Z-axis plate operable for rectilinear translation of the Z-axis plate.

Please replace the paragraph beginning on page 3, line 17 with the following rewritten paragraph:

A Z-axis plate is shown at 28, and is dimensioned for insertion and retention within Y-axis plate 24 as will be described with reference to Fig. 4. As also shown in Fig. 2, a stage insert indicated at 30 is dimensioned for being received within Z-axis plate 28, for mounting a slide (or other sample holder) **33** which will contain the sample for

investigation. Only a single piezoelectric actuator is shown in Fig. 2 at 40, but there will be a total of three as will be described. The piezoelectric actuators provide a mechanism for engaging a bottom of the Z-axis plate, and rectilinearly translating that plate in the Z-axis direction. Shown diagrammatically are a controller at 20, a computer at 21, and a closed loop piezo controller at 23, with electrical connections shown to the X plate and the piezoelectric mechanism. The connections are not shown in detail because such are conventional.

Please replace the paragraph beginning on page 4, line 5 with the following replacement paragraphs:

In Fig. 3, there is shown an end view, of the components just described, illustrated in an exploded view to show their positioning relative to an optical microscope's objective lens. The optical microscope's stand or base, indicated at 16, supports a turret 32 and the microscope's objective (only one being shown) is indicated at 12. A stationary bottom plate indicated at 36 is mountable on the base, and is dimensioned for receiving X-axis plate 22, and Y-axis plate 24 is shown with piezoelectric actuators indicated at 40 and 42. As will be described, there are three piezoelectric actuators, and they are connected to engage the underside of flanged portions extending along the length of Z-axis plate 28. The stage insert is shown at 30, including its recess 31 for receiving therewithin a slide 33, for example. As mentioned previously, for optical microscopes in which the objective lens is located below the slide 33, each of the components, such as bottom plate 36, X-axis plate 22, Y-axis plate 24,

Z-axis plate 28 and stage insert 30 are open in their internal regions for viewing of the sample carried on the slide or other holder 33 by the below-mounted objective lens.

Fig. 4 is a perspective view of Z-axis plate 28 spaced above the Y-axis plate, prior to assembly, and it can be seen that each of the plates includes an internal opening. For example, Y-axis plate 24 is formed with an opening 25 which is dimensioned to receive depending ledges of Z-axis plate 28, so that the Z-axis plate may be mounted or nested within the Y-axis plate and thereby carried by the XY plate assembly. As shown in Fig. 4, a piezoelectric actuator mechanism interposed between the XY plate assembly and the Z-axis plate includes three piezoelectric actuators indicated generally at 40, 42 and 44. The piezoelectric actuators are shown in more detail in the view of Fig. 5, which isolates Y-axis plate 24 directly from above. It will be seen that each piezoelectric actuator includes an element such as an end or metallic projection indicated at 40a, 42a and 44a which engage the planar, corresponding undersurface of Y-axis plate 24. Upon suitable actuation by the controller, the projections, by virtue of the piezoelectric effect, will move simultaneously thereby to rectilinearly translate the Z-axis plate, upwardly or downwardly, along the Z-axis and correspondingly the slide insert and slide 33, when the unit is assembled.

Please replace the paragraph beginning on page 5, line 17 with the following replacement paragraphs:

It will also be noted in Fig. 5 that receiving ledges, such as indicated at 25a-d are provided on Y-axis plate 24 for receiving depending portions on the underside of Z-axis plate 28. Fig. 6 shows the fully inserted Z-axis plate into position in the Y-axis plate.

Fig. 7 shows stage insert 30 being directed downwardly toward Z-axis plate 28, and will be maintained in the position by retaining clips 29. With stage insert 30 in position, prior to receiving a sample slide or other holder 33, the entire stage assembly is open so that the slide or holder 33 may be viewed by objective lens 12. In the preferred embodiment the footprint for stage insert 30 may be an industry standard so that third party sample incubators and sample preparation formats are supported.